

BOTTOM ANTIREFLECTION COATING COLOR FILTER PROCESS FOR FABRICATING SOLID STATE IMAGE SENSORS

ABSTRACT

An image sensor system and methods of making such a system are described. The image sensor system includes a color filter array that is formed by a color filter process that incorporates a bottom antireflection coating. The bottom antireflection coating forms a protective layer that protects exposed areas of the active image sensing device structure during formation of the color filter array and, thereby, preserves the intrinsic transmission characteristics of the active image sensing device structure. The bottom antireflection coating also reduces degradation of metal structures (e.g., bonding pads) and pixel edges at the exposed surface of the active image sensing device structure. In addition, the bottom antireflection coating provides a reliable adhesive surface for the color filter array, substantially eliminating lifting of the color filter array resist structures. In some embodiments, the bottom antireflection coating also improves the optical transmission characteristics of one or more colors of the colors filter array.